SOLAR BASED ELECTRICAL ENERGY GENERATION WITH SPECTRAL COOLING

ABSTRACT OF THE DISCLOSURE

Method and system for converting solar energy into electrical energy utilizing serially coupled multijunction-type photovoltaic cells in conjunction with a form of spectral cooling. The latter cooling is carried out by removing ineffective solar energy components from impinging concentrated light, inter alia, through the utilization of dichroics or the conversion of ineffective solar energy components to effective energy components by means of luminescence, phosphorescence, or fluorescence. Ineffective solar energy components are described as those exhibiting wavelengths outside the bandgap energy defined wavelength and an associated wavelength defined band of useful photon energy.